VERSION OF SPECIFICATION WITH MARKINGS TO SHOW CHANGES MADE

[0031] As shown, the central group 140 of lead fingers 104 extending between the side 126 of die 100 lying closest to package edge 106 are extremely short, straight, mutually parallel and of uniform length, while those lead fingers 104 of flanking side groups 142 and 144 extending between transverse sides 128 and 130 of die 100 and package edge 106 are of various lengths, and most of the lead fingers 104 of groups 142 and 144 curve as they make a 90 degree turn from respective orientations perpendicular to die [edges]sides 128 and 130 to one perpendicular to package side 106 as they exit the latter.

[0035] Referring to FIG. 2 of the drawings, lead fingers 204 of lead frame 202 of the previously-described LOC configuration extend over the active surface 222 of die 200, being adhered thereto by a dielectric tape 223 such as the aforementioned Kapton™ type having an adhesive on each side thereof. Wire bonds 224 extend between bond pads 220 disposed in a central longitudinal row on active surface 222 and inner ends of lead fingers 204. Voltage reference plane 250, which in this instance comprises a frame-like structure having two elongated parallel sections or elements 252 joined at their ends by mutually transverse sections 254 (one shown in broken lines), [are]is adhered to the exposed upper surfaces of lead fingers 204 by an insulating or dielectric material 248, such as a non-conductive epoxy. Alternatively, another layer of polyimide or other dielectric tape or film having an adhesive on each side thereof may be used to adhere voltage reference plane 250 to the tops of lead fingers 204 while mutually electrically insulating the elements. As shown in FIG. 2, voltage reference plane 250 may be of substantial depth or thickness in comparison to the total depth of transfer-molded plastic package 208, the large mass of voltage reference plane 250 acting as a heat sink to promote heat transfer from die 200 in operation. Also notable in FIG. 2 is the wire bond 260 extending between a ground (V_{ss}) or other reference potential pin lead finger 204 and voltage reference plane 250, whereby voltage reference plane 250 is electrically connected thereto.

VERSION OF CLAIMS WITH MARKINGS TO SHOW CHANGES MADE

1. (Amended) A semiconductor die assembly comprising:

a semiconductor die having a plurality of bond pads on an active surface thereof;

a lead frame having at least a first group of lead fingers and a second group of lead fingers to respectively extend from first and second opposing sides of said semiconductor die attached to a die-attach location on said lead frame to another, single side of [the]said lead frame in a substantially mutually parallel configuration;

a first voltage reference plane to [overly]overlie in immediate proximity to said first group of lead fingers and in electrical isolation therefrom; and

a second voltage reference plane to [overly]overlie in immediate proximity to said second group of lead fingers and in electrical isolation therefrom.

3. (Amended) The assembly of claim 1, wherein said first voltage reference plane and said second voltage reference plane [is]are adhered to at least some of the lead fingers of said first group of lead fingers and said second group of lead fingers, respectively.

4. (Amended) The assembly of claim 3, wherein said first voltage reference plane and said second voltage reference plane [is]are adhered directly via a non-conductive adhesive to said at least some of the lead fingers of said first group of lead fingers and said second group of lead fingers, respectively.

6. (Amended) The assembly of claim 5, wherein said packaging material at least partially covers said first and said second voltage reference [plane]planes and said first and said second [group]groups of lead fingers.

9. (Amended) The assembly of claim 1, wherein said first voltage reference plane and said second voltage reference plane [is]are electrically connected to at least one lead finger of said first group of lead fingers and said second group of lead fingers, respectively, which in turn is connected through a bond pad to a reference potential of said semiconductor die.

13. (Amended) The assembly of claim 1, wherein said first voltage reference plane and said second voltage reference plane [is]are of sufficient mass to measurably alter heat transfer characteristics of said assembly.

15. (Amended) The assembly of claim 1, wherein said first voltage reference plane and said second voltage reference plane [extends]extend over at least about fifty percent of a surface area of said at least said first group of lead fingers and said second group of lead fingers, respectively.

16. (Amended) The assembly of claim 1, wherein said first voltage reference plane and said second voltage reference [is]are separated from said at least said first group of lead fingers and said second group of lead fingers, respectively, by an insulating adhesive structure.

17. (Amended) The assembly of claim 16, wherein said insulating adhesive structure comprises an insulating film having an adhesive on opposing surfaces thereof, one surface of said opposing surfaces being adhered to at least one of said first group of lead fingers and said second group of lead fingers and another surface of said opposing surfaces being adhered to at least one of said first voltage reference plane and said second voltage reference plane.

18. (Amended) A vertical surface mount lead frame to be assembled to a semiconductor die, comprising:

a lead frame having at least a first group of lead fingers and a second group of lead fingers to respectively extend from first and second opposing sides of an intended die-attach location to another, single side of said lead frame in a substantially mutually parallel configuration;

a first voltage reference plane to [overly]overlie in immediate proximity said first group of lead fingers and in electrical isolation therefrom; and

a second voltage reference plane to [overly]overlie in immediate proximity said second group of lead fingers and in electrical isolation therefrom.

19. (Amended) The assembly of claim 18, wherein said first voltage reference plane and said second voltage reference plane [is]are adhered to at least some of the lead fingers of said first group of lead fingers and said second group of lead fingers, respectively.

20. (Amended) The assembly of claim 19, wherein said first voltage reference plane and said second voltage reference plane [is]are adhered directly via a non-conductive adhesive to said at least some of the lead fingers of said first group of lead fingers and said second group of lead fingers, respectively.

24. (Amended) The assembly of claim 18, wherein said first voltage reference plane and said second voltage reference plane [extends]extend over at least about fifty percent of a surface area of said at least said first group of lead fingers and said second group of lead fingers, respectively.

26. (Amended) The assembly of claim 25, wherein said insulating adhesive structure comprises an insulating film having an adhesive on opposing surfaces thereof, one surface of said opposing surfaces being adhered to at least one of said first group of lead fingers and said second group of lead fingers and another surface of said opposing surfaces being adhered to at least one of said first voltage reference plane and said second voltage reference plane.